

PLANT BIOLOGY, PHD

for the degree of Doctor of Philosophy in Plant Biology

The Department of Plant Biology offers two graduate degrees, the Master of Science and the Doctor of Philosophy. The department also participates in the interdepartmental graduate program: the Program in Ecology, Evolution and Conservation Biology (<http://sib.illinois.edu/peec/>).

The Department teaches and conducts foundational research in plant biology. Its focus is integrative. Biological processes are investigated at multiple levels of organization using molecular, biochemical, physiological, morphological, and ecological approaches.

Areas of specialization within the department include:

- biochemistry
- biodiversity
- bioinformatics
- cell biology
- conservation biology
- development
- ecology
- environmental physiology
- evolution
- genetics
- genomics
- modeling
- molecular biology
- mycology
- paleobotany
- paleoecology
- photosynthesis
- phytochemistry
- population biology
- biotechnology
- systems biology
- systematics

Graduate students receive broad biological and professional training and acquire expertise in their areas of specialization.

The Plant Biology Departmental website (<http://www.life.illinois.edu/plantbio/>) provides additional information about the department, its admissions procedures, degree requirements, facilities, and the research interests of its faculty.

Admission

Prospective students are encouraged to identify faculty member(s) whose research specialty(ies) most closely coincide(s) with their interests and to correspond directly with them. Acceptance to the Doctor of Philosophy graduate program is based on the applicant's academic achievement and research potential. While departmental requirements do not specify particular courses as prerequisites for admission, applicants should have had undergraduate coursework in biology or related sciences. Admission to the graduate program requires an undergraduate grade point average of at least 3.0 (A = 4.0). Graduate Record Examination (GRE) scores (or approved equivalent) are not required but may be submitted to strengthen application package; however no minimum scores are specified for admission. International students should have a Test of English as a Foreign Language (TOEFL) score of 600 or above on the paper-based test, or 102 or above on the internet-based test (iBT). The IELTS exam is also accepted, and applicants should have a score of 7.0 or higher.

Facilities and Resources

The Plant Biology Department's diverse state-of-the-art research laboratories are located in Morrill Hall, Edward R. Madigan Laboratory, and the Institute for Genomic Biology. In addition, the department maintains extensive plant growth-chamber facilities, environmentally controlled greenhouses, a conservatory with live teaching and research collections, herbaria, a center for paleobotanical collections, and diverse local and remote field sites including SoyFACE (<http://soyface.illinois.edu/>). The University also offers exceptional research support services including the Roy J. Carver Biotechnology Center (<http://www.biotech.illinois.edu/>), service laboratories in the Institute for Genomic Biology (<http://www.igb.illinois.edu/facilities->

services/), the Beckman Institute (<http://www.beckman.illinois.edu/>), and the University Library (<http://www.library.illinois.edu/>), one of the world's largest.

Financial Aid

Fellowships, teaching assistantships, and research assistantships are available for qualified MS and PhD students in Plant Biology. Fellowships are awarded on a competitive basis.

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Candidates for the Ph.D. are expected to complete a minimum of 96 hours of graduate coursework and research. A formal evaluation (the Two-Year Review) of the student's academic progress is made prior to the end of the second year of study (end of Stage 1). Departmental approval must be obtained at this juncture in order to continue in the graduate program. A Preliminary Examination is taken during the second year (if the student entered with an M.S. degree) or the third year (if the student entered with a B.S. degree) (end of Stage 2). This consists of an oral examination of general knowledge in three of nine broadly-defined areas of plant biology and defense of a written research proposal on the thesis research topic prepared by the student. Experience in teaching is considered a vital part of the graduate program and is required as part of the academic work of all Ph.D. candidates. The final stage (Stage 3) of the program consists of preparing an acceptable thesis based on independent research designed in consultation with a faculty advisor and approved by a graduate faculty thesis committee. A final oral examination, in which the student defends the thesis, a public seminar, and deposit of an approved thesis complete the program. The Ph.D. degree program is expected to be completed within five years. See the Plant Biology Department's online Graduate Student Handbook (<http://www.life.illinois.edu/plantbio/gradhandbook.htm>) for a detailed description of the Stages and Requirements of the Ph.D. program.

For additional details and requirements, please refer to the Plant Biology Department's online Graduate Handbook (<http://www.life.illinois.edu/plantbio/gradhandbook.htm>) and the University's Graduate College Handbook (<http://www.grad.illinois.edu/gradhandbook/>).

Entering with approved M.S./M.A. degree

Code	Title	Hours
Research/Project/Independent Study Hours (no max applied toward degree)		
PBIO 599	Thesis Research (no max applied toward degree)	
Total Hours		64

Other Requirements

Requirement	Description
Other requirements may overlap	
Teaching:	at least the equivalent of one semester as a half-time teaching assistant
Masters Degree Required or Admission to PhD?	No, but Masters level requirements (32 hours minimum) must be met in order to enter State 2 of Ph.D. program.
Preliminary Exam Required:	Yes, at the end of State 2, in order to enter Stage 3
Final Exam/Dissertation Defense Required:	Yes, at end of Stage 3
Dissertation Deposit Required:	Yes, at end of Stage 3
Minimum GPA:	3.0

Entering with approved B.S./B.A. degree

Code	Title	Hours
Research/Project/Independent Study Hours (no max applied toward degree):		
PBIO 599	Thesis Research (no max applied toward degree)	
Total Hours		96

Other Requirements

Requirement	Description
Other Requirements: ²	
Teaching:	at least the equivalent of one semester as a half-time teaching assistant
Minimum GPA:	3.0
Masters Degree Required or Admission to PhD?	No, but Masters level requirements (32 hours minimum) must be met in order to enter State 2 of Ph.D. program.
Preliminary Exam Required:	Yes, at the end of State 2, in order to enter Stage 3
Final Exam/Dissertation Defense Required:	Yes, at end of Stage 3
Dissertation Deposit Required:	Yes, at end of Stage 3

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1. Design and implement independent research and integrate and apply core knowledge related to their field in 3 approved core areas out of 9 (anatomy, biochemistry, development, ecology, evolution, genetics, molecular biology, physiology, and systematics)
2. Demonstrate effective oral and written communication skills
 - a. Presentations
 - b. Publications
3. Apply rigorous statistics/analytical methods that typify their area of study
4. Professional skills
 - a. Data management
 - b. Citation management
 - c. Mentoring
 - d. Ethics
 - e. Professionalism
 - f. Networking
5. Teaching experience

Graduate Degree Programs in Plant Biology

- Plant Biology, MS (<http://catalog.illinois.edu/graduate/las/plant-biology-ms/>)
- Plant Biology, PhD (p. 1)

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Department of Plant Biology

Head of the Department: Andrew Leakey

Plant Biology website (<http://sib.illinois.edu/plantbio/>)

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(217) 333-3261; fax: (217) 244-9952

Plant Biology email: plants@life.illinois.edu

College of Liberal Arts & Sciences

College of Liberal Arts & Sciences website (<https://las.illinois.edu/>)

Admissions

Graduate College Admissions & Requirements (<https://grad.illinois.edu/admissions/apply/>)